

DESCRIPTION OF A NEW GENUS *NIRMALADIA* FOR THE SPECIES  
*CULLADIA DENTILINEALIS* HAMPSON  
 (LEPIDOPTERA: CRAMBINAE)<sup>1</sup>

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(With seven text-figures)

*Culladia dentilinealis* Hampson is not congeneric with other species of genus *Culladia* Moore, as evidenced from the structure of different body parts. The species has been accordingly put under a new genus *Nirmaladia*.

INTRODUCTION

During an exhaustive collection survey of Pyralid moths from North India in the last five years or so, I collected one hundred and forty-five species belonging to different sub-families of family Pyralidae. Out of these, seven species are referable to the subfamily Crambinae. One of the Crambin species namely, *Culladia dentilinealis* Hampson does not agree with the description of the diagnostic features of its type-species (*Araxes admigratella* Walker) and is also not congeneric with other described species under this genus (Hampson 1895, 1896; Bleszynski 1970). The characters possessed by the species, *Culladia dentilinealis* are so unique and conspicuous that it requires a new genus and, accordingly, the genus *Nirmaladia* is proposed to form a new combination *N. dentilinealis* (Hampson).

OBSERVATIONS AND DISCUSSION

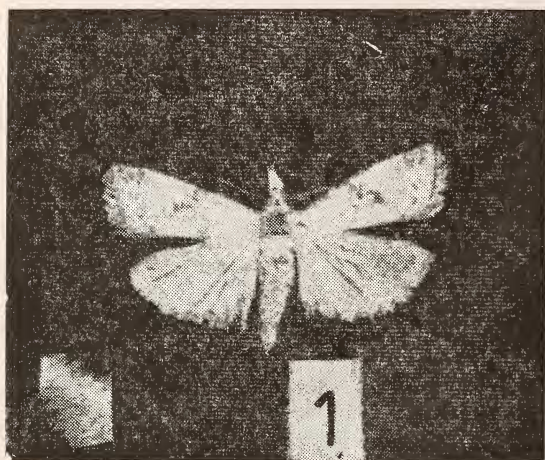
The genus *Culladia* was first erected by Moore (1886) in order to replace the pre-occupied generic name *Araxes* (Walker 1863), the latter being established on the type-species *admigratella* Walker. This type-species along with other *Culladia* spp. were further examined

by Hampson (1895, 1896, 1919), who slightly improved the diagnostic characters of this genus by adding the venation of the fore and hind wings. Later, Bleszynski (1963, 1970) revised and redefined the genus *Culladia*, which he considered to be a waste basket for species belonging to several distinct genera. He, thus, suggested a rearrangement of the species referred to this genus alongwith the erection of new genera allied to *Culladia* (Bleszynski 1970a). He however, reluctantly retained the species *dentilinealis* Hampson under the genus *Culladia* although he made a mention of the exceptional features possessed by this species. Recently, Gaskin (1973) pointed out that Bleszynski has failed to give characters exclusive to *Culladia* and distinct from the characters of other allied genera.

In the course of present studies, I examined fifteen specimens of the species under reference and identified it as *Culladia dentilinealis*, first described by Hampson (1919). Its identity is definite because it completely agrees with the description given by Hampson (1919) and its genitalia are similar to those figured by Bleszynski (1970). A careful examination of the present species reveals that the structure of the antennae, the venation of the wings and the various constituent parts of the genitalia are quite distinct and different from those of *Culladia*.

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*Nirmaladia dentilinealis* (Hampson)  
Fig. 1. Photograph of the adult moth.

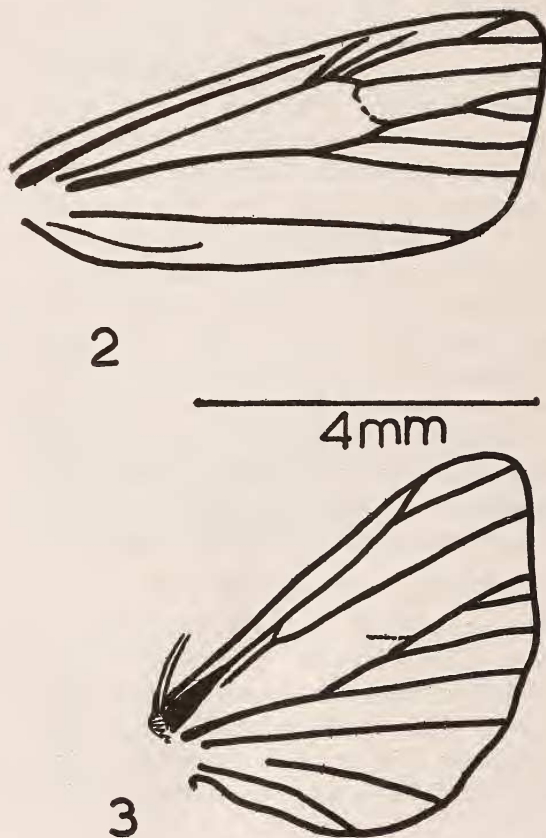
The structure of the antenna in male *dentilinealis* Hampson, is not serrate as in other *Culladia* spp. and also the ocellus is extremely poorly developed in the former as compared to the well developed ocellus in latter. In *Culladia*, the vein  $R_5$  of the forewing is very short and stalked with  $R_4$  but in the species under reference, the veins  $R_3$  and  $R_4$  are stalked and vein  $R_5$  is quite long and arises independently from the discal cell. The veins  $M_2$  and  $M_1$  of the hind wing are stalked in *dentilinealis* whereas one of them is either absent or vestigial in *Culladia*. The male genitalic structures of the present species differ drastically from *Culladia* in many important characters namely, lacking a fine hook at the distal end of the uncus, the complete absence of apical processes of the aedeagus and in having a single long cornutus in the vesica. The structure of the valvae is very unique and of rare occurrence (I have dissected one hundred and forty-five species of family Pyralidae and this is perhaps the solitary example where such type of valva occurred). The female genitalia in *dentilinealis* Hampson is conspicuous in lacking a scobinate signum in

its corpus bursae and by the absence of anterior apophyses. The abdomen of the female in *Culladia* is furnished apically with broad scales and such scales are completely wanting in *dentilinealis*.

Keeping in view these differences of the species, I am proposing a new genus for it. The genus is named as *Nirmaladia* gen. nov., which is characterised below :

Genus : *Nirmaladia* gen. nov.

Type-species: *Culladia dentilinealis* Hampson  
Ann. Mag. nat. Hist. (9) 3: 286.



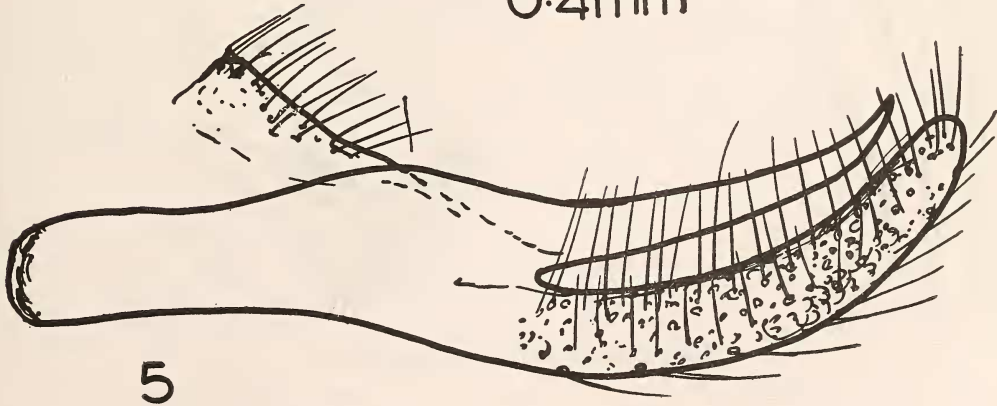
*Nirmaladia dentilinealis* (Hampson)  
Figs. 2 & 3. Fore and hind wing.

NEW DESCRIPTIONS



0.5 mm

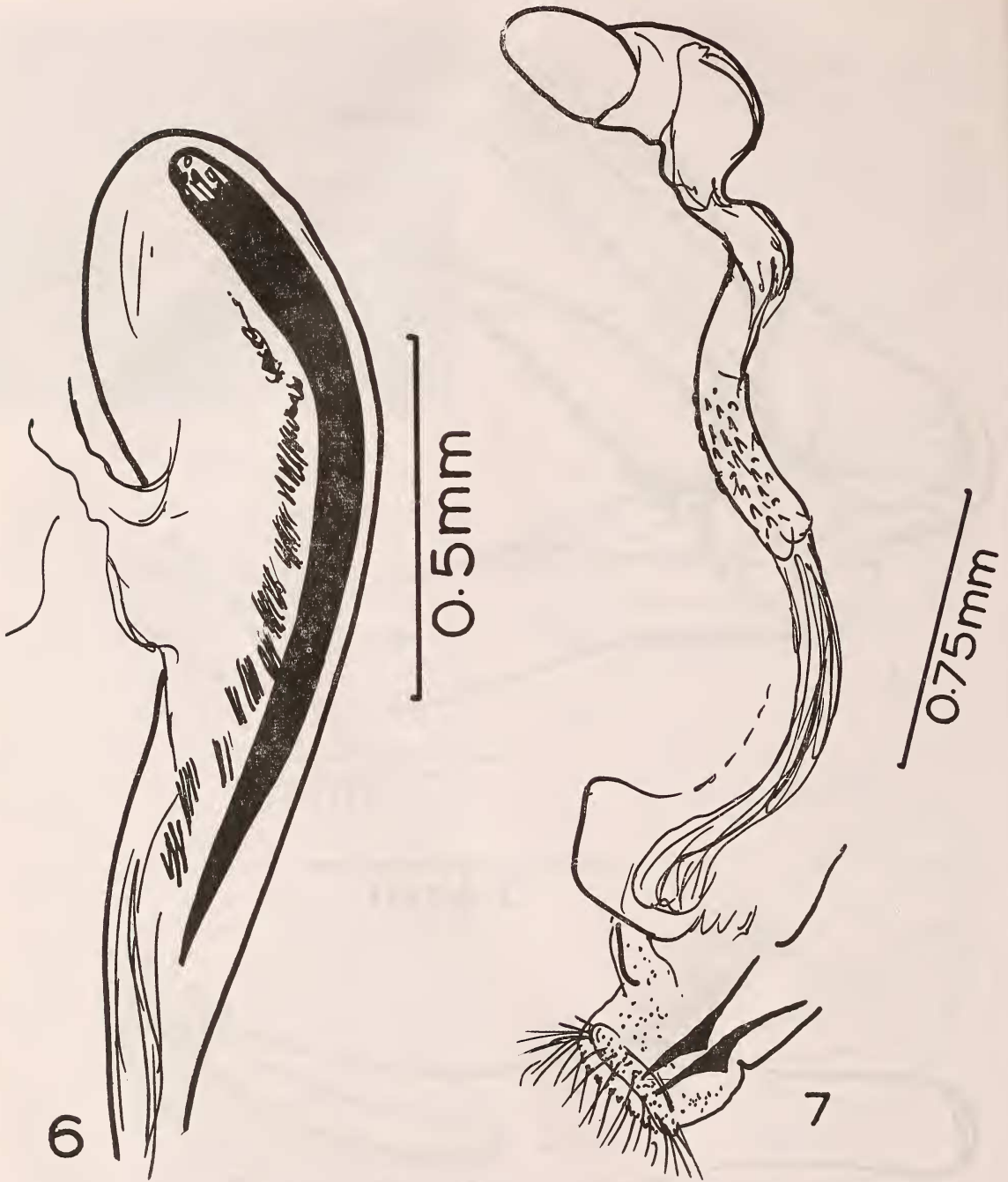
0.4 mm



5

*Nirmaladia dentilinealis* (Hampson)

Fig. 4. Male genitalia with one valva and aedeagus removed. Fig. 5. Valva.



*Nirmaladia dentilinealis* (Hampson)

Fig. 6. Aedeagus.

Fig. 7. Female genitalia.



## NEW DESCRIPTIONS

(Type-locality: India, Punjab)

(Figs. 1-7)

Labial palpus porrect, extending about thrice the length of head, thickly scaled. Maxillary palpus triangularly scaled. Frons rounded. Antenna of male thickened but without any serrations. Ocellus poorly developed. Fore-wing with vein  $R_1$  free;  $R_2$  free;  $R_3$  stalked with  $R_4$ ;  $R_5$  arises from below upper angle of cell;  $M_1$  absent;  $M_2$  and  $M_3$  stalked. Hind wing with  $R_s$  anastomosing with  $Sc + R_1$ ; veins  $M_2$  and  $M_3$  stalked. Abdomen of the female tapering distally and without any prominent scales.

*Male genitalia*: Uncus moderately long, slender, tapering to apex, densely setose with anteriorly directed setae, extreme tip naked and without any hook; gnathos well developed, almost equal to uncus, strongly sclerotized; tegumen very long, with sides almost parallel and strongly sclerotized, without pons; vinculum produced anteriorly into an extremely rudimentary saccus. Valva of unique type, with basal half without any differentiation of costa and sacculus; distal half sharply and deeply bifurcated, its dorsal lobe slender and densely setose, ventral projection pointed and naked.

Transtilla inconspicuous; juxta small and notched. Aedeagus long, rounded anteriorly (without any apical process), finely tapering towards distal end; vesica impregnated with a heavily sclerotized long cornutus and small patches of short setae below the curvature of cornutus.

*Female genitalia*: Corpus bursae relatively short, membranous with a few sclerotized lines; signum absent; ductus bursae long, semi-membranous, denticulate around the middle; anterior apophyses absent; posterior apophyses moderately long and thick, each with an angular thickening near base; ovipositor lobes broad and fringed with different sized setae.

*Distribution*: India and Nepal.

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